



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,179	10/29/2003	Noboru Shimoyama	1232-5188	8187
27123	7590	08/23/2005	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			GARCIA JR, RENE	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/697,179	Applicant(s) SHIMOYAMA, NOBORU	
	Examiner Rene Garcia, Jr.	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Ink Jet Printing Apparatus And Ink Jet Printing Method With An Air Current Generating Means To Remove Ink Mists Generated In The Apparatus.

Election/Restrictions

2. Claim 2 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 29 July 2005.
3. This application contains claim 2 drawn to an invention nonelected with traverse in Paper No. 29 July 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
4. Applicant's election with traverse of Species I in the reply filed on 29 July 2005 is acknowledged. The traversal is on the ground(s) that the identified species are not independent and that a serious burden does not exist. This is not found persuasive because one claim recites limitations found in species I but not found in species II and one claim recites limitation found in species II but not found in species II, thereby claims have mutually exclusive characteristics; thereby posing a serious burden to examine.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3-5 and 10 are rejected under 35 U.S.C. 103(a) as being obvious in view of Watanabe et al. (US PG PUB 2002/0057312).

Watanabe et al. disclose the following claimed limitations:

*regarding claims 1 and 10, an ink jet printing apparatus/**ink jet system**/ and method that carries out printing on a print medium using a print head/**recording head**/ (fig. 1; paragraph 0057) for applying ink, the apparatus comprising: (fig. 14; paragraph 0004)

*air current generating means/**cooling fan, 15**/ for generating air currents inside the printing apparatus (paragraph 0071; fig. 5; fan is connected to print head [located inside of the ink jet printing apparatus therefore air currents are within the printing apparatus])

*control means/**CPU, 100**/ for controlling said air current generating means in accordance with the driving conditions determined by said determining means (fig. 3; paragraph 0079; "cooling start temperature" and "cooling end temperature")

*regarding claim 4, said control means drives said air current generating means only for the driving time determined by determining means (paragraph 0079; the cooling fan is only operated during the time of temperature exceeding a predetermined temperature)

Watanabe et al. does not disclose the following claimed limitations:

Art Unit: 2853

*regarding claims 1 and 10, determining means for determining driving conditions for said air current generating means on the basis of information on the amount of ink to be provided per unit area of a print medium (paragraphs 0078 & 0079; temperature sensor determines when to turn the cooling fan on/off, it is known in the art that firing of the nozzles contributes to an increase of the print head temperature and an increase of the amount of ink to be ejected significantly increases temperature) for the purpose of driving the air current generating means/**cooling fan, 15/** (fig. 5) to control the recovery of mist ejected from the print head that has not been deposited on the medium.

*regarding claim 3, in accordance with the number of dots provided to said unit area (“amount of ink” is the number of dots provided [more dots more ink amount, less dots less ink amount] for the purpose of driving the air current generating means/**cooling fan, 15/** (fig. 5) to control the recovery of mist ejected from the print head that has not been deposited on the medium.

*regarding claim 5, driving time for said air current generating means/**cooling fan, 15/** is determined to be longer as the amount of ink provided to said unit area increases (paragraph 0079; as the amount of ink ejected is increased the temperature within the print head increases, due to the increase in temperature the driving time of the cooling fan is increased. Therefore while the temperature exceeds a predetermined temperature the driving time of the fan is increased) for the purpose of driving the air current generating means/**cooling fan, 15/** (fig. 5) to

Art Unit: 2853

control the recovery of mist ejected from the print head that has not been deposited on the medium.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize determining means for determining driving conditions for said air current generating means on the basis of information on the amount of ink to be provided per unit area of a print medium; , in accordance with the number of dots provided to said unit area; and driving time for said air current generating means is determined to be longer as the amount of ink provided to said unit area increases into Watanabe et al. for the purpose determining the driving conditions to control the recovery of mist ejected from the print head that has not been deposited on the medium.

6. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US PG PUB 2002/0057312) in view of Kanaya et al. (US PG PUB 2001/0020962).

Watanabe et al. disclose the claimed limitations:

*regarding claims 8 and 9, said air current generating means includes a fan/cooling fan, 15/ to let in outside air and carry out ventilation (paragraphs 0083, 0088 & 0089; fig 5 – fan/15/ pulls air in/outside is left region of fan/ in the direction of arrows/30/)

*further regarding claim 9, fan to exhaust internal air to an exterior (paragraph 0086; mist absorbing fan for air flow form the interior to the exterior of the recording apparatus)

Watanabe et al. does not disclose the following claimed limitations:

*further regarding claims 8 and 9, said air current generating means includes a fan motor and a fan driven by the fan motor

Kanaya et al. disclose the following:

*further regarding claims 8 and 9, said air current generating means includes a fan motor and a fan driven by the fan motor

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize an air current generation means including a fan motor and a fan driven by the fan motor as taught by Kanaya et al. into Watanabe et al. for the purpose of driving a ventilation fan for preventing an increase in the internal temperature of the recording apparatus (generate air current).

Allowable Subject Matter

7. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claim 6 is the inclusion of the limitation of an ink jet printing apparatus that includes determining means determines a driving voltage for said air current generating means in accordance with information on the amount of ink provided to the unit area of said print medium; and said control means drives said air current generating means using the driving voltage determined by said determining means. It is this limitation found in the claim, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

9. The primary reason for the allowance of claim 7 is the inclusion of the limitation of an ink jet printing apparatus that includes said determining means determines at least one of the

Art Unit: 2853

driving time and driving voltage for said air current generating means in accordance with information on the amount of ink provided per the unit area of said print medium; and said control means drives said air current generating means under the driving condition determined by said determining means; and wherein the amount of air currents generated per unit time is changed by changing at least one of said driving time and said driving voltage. It is this limitation found in the claim, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Conclusion

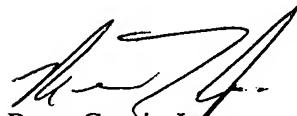
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sato et al. (US PG PUB 2002/0180854) disclose an inkjet printing apparatus with air flow generated by fan to control mist in the apparatus. Koitabashi et al. (US PG PUB 2002/0167576) disclose air current generation to control mist within an inkjet printing apparatus. Cooper et al. (US 5,774,141) disclose a carriage mounted inkjet aerosol reduction system.

Art Unit: 2853

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rene Garcia, Jr. whose telephone number is (571) 272-5980. The examiner can normally be reached on M-F 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Rene Garcia Jr.
10 August 2005


K. PEGGINS
PRIMARY EXAMINER 8/05